

REMARKS

The Official Action mailed October 31, 2007, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to February 29, 2008. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on May 29, 1998; October 13, 1998; June 2, 1999; September 13, 1999; May 18, 2000; September 6, 2000; November 2, 2000; January 29, 2001; April 9, 2001; July 17, 2001; September 12, 2001; February 28, 2002; October 1, 2002; October 11, 2002; March 5, 2003; November 14, 2005; October 2, 2006; and March 20, 2007.

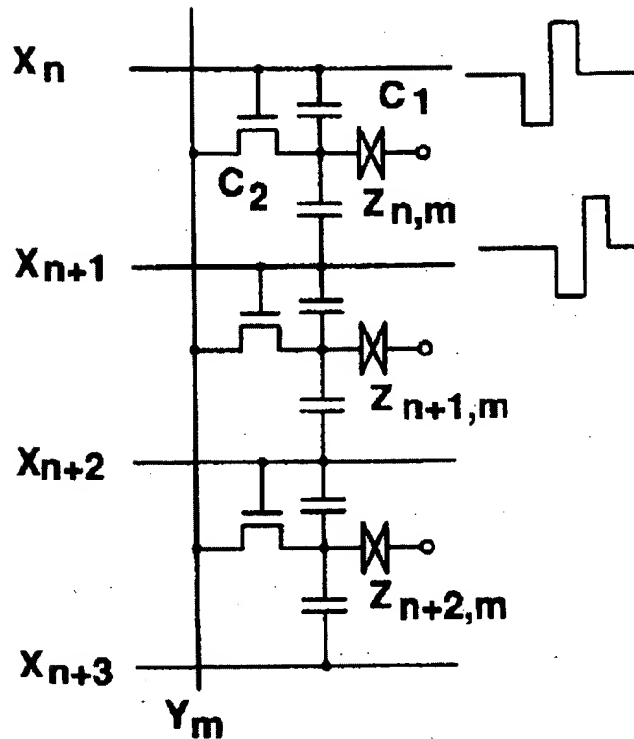
Claims 1, 3, 5, 50, 53-55, 58, 61, 62, 65-67, 70, 74, 75, 78, 81, 85, 86, 92, 95, 98-100, 103, 106, 107, 110-112, 115, 118 and 121-165 are pending in the present application of which claims 1, 5, 50, 53-55, 58, 61, 62, 65-67, 70, 74, 75, 78, 81, 121, 125, 129, 133, 137, 139, 142, 148 and 153 are independent. Claims 3, 133, 139, 141, 153 and 160 have been amended to correct minor matters of form. The Applicant notes with appreciation the allowance of claims 1, 3, 5, 50, 53-55, 58, 61, 62, 65-67, 70, 74, 75, 78, 81, 85, 86, 92, 95, 98-100, 103, 106, 107, 110-112, 115, 118, 129-141 and 153-158 and the indication of the allowability of claims 124, 127, 146 and 151 (pages 4-6, Paper No. 20071028). For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Official Action rejects claims 159-165 under 35 U.S.C. § 112, first paragraph, "as failing to comply with the written description requirement" (page 3, Id.). Specifically, the Official Action asserts that "[n]owhere in the original specification does it disclose 'a driving circuit connected to the gate lines for generating a bipolar pulse or first and second bipolar pulses' ..." (Id.). The Official Action is implying that a lack of explicit disclosure for a given term is insufficient to comply with the written description requirement of § 112, first paragraph. While the Applicant concedes that the

specification does not explicitly disclose a "driver circuit," the Applicant respectfully submits that explicit disclosure is not required to comply with the written description requirement, and, for at least this reason, the Applicant disagrees and traverses the assertions in the Official Action.

As noted in MPEP § 2163, "[w]hile there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure" (emphasis added). Also, "[t]he fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., Vas-Cath, Inc., 935 F.2d at 1563-64, 19 USPQ2d at 1117." The Applicant respectfully submits that the features of claims 159-165 are supported in the present specification through express, implicit and inherent disclosure. Also, the Applicant respectfully submits that the present specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, the Applicant was in possession of the invention as now claimed.

The Official Action appears to question the written description of "a driving circuit connected to the gate lines for generating a bipolar pulse or first and second bipolar pulses." It is important to note that the present specification literally and explicitly supports gate lines, a bipolar pulse and first and second bipolar pulses. For example, Figure 1(D) of the present specification (reproduced below) appears to show examples of gate lines and first and second bipolar pulses.



The features of Figure 1(D) are described in the present specification, for example as follows: "gate line (X_n) is in parallel with the gate line (X_{n+1}) ... capacitances C_1 and C_2 ... the gate line is required to be supplied with a bipolar pulse comprising a combination of a positive pulse and a negative pulse ... In a picture element $Z_{n,m}$, C_2 is supplied with a pulse for driving a picture element $Z_{n+1,m}$ " (pages 10-11).

In the *Supplemental Amendment* filed July 3, 2007, the Applicant sets forth a detailed discussion as to how the present specification supports the features of independent claims 121, 125, 129, 133, 142, 148 and 153, including the following: "that a bipolar pulse is applied to the gate line of n-th row and that the bipolar pulse includes a first pulse and a second pulse having an opposite polarity to the first pulse," and "that a first bipolar pulse is applied to the gate line of n-th row during a first period, a second bipolar pulse is applied to the gate line of (n+1)-th row during a second period, and the second period appears later than and partly overlaps the first period" (see pages 32-34). The Official Action does not appear to dispute the support for the above-referenced

features of claims 121, 125, 129, 133, 142, 148 and 153. Therefore, the only issue that appears to be raised by the present rejection under § 112, first paragraph, is whether the present specification provides a written description for the first portion of dependent claims 159-165, i.e. "a driving circuit" for generating the admittedly fully supported bipolar pulse or pulses.

The Applicant respectfully submits that a driving circuit connected to the gate lines for generating a bipolar pulse or first and second bipolar pulses is disclosed in the present specification through express, implicit and inherent disclosure. Also, the Applicant respectfully submits that the present specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, the Applicant was in possession of the driving circuit as now claimed.

As noted in the *Supplemental Amendment* filed July 3, 2007, the features of claims 159-165 are disclosed in the subject application, for example, in the paragraph bridging pages 11-12, which discusses a driving operation in accordance with the present invention. Although the details of the driving circuitry are not specifically disclosed, such circuitry to generate the waveforms disclosed and claimed in the subject application was well within the level of ordinary skill in the art at the time the application was filed. It is well established that "not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art." MPEP § 2164.08.

Also, the title of the present application is "ELECTRO-OPTICAL DEVICE AND METHOD OF DRIVING THE SAME" (emphasis added). The driving of a picture element is discussed in detail, for example, at page 8, line 28, to page 12, line 4. Specifically, for example, the specification discloses the following at page 10, line 24, to page 11, line 21 (emphasis added):

An equivalent circuit of FIG. 1(B) is shown in FIG. 1(D). In this case, as shown in FIG. 1(D), the gate line is required to be supplied with a

bipolar pulse comprising a combination of a positive pulse and a negative pulse. This is because when one gate line is selected, another gate line is required to be supplied with a voltage having opposite polarity. In a picture element $Z_{n,m}$, C_2 is supplied with a pulse for driving a picture element $Z_{n+1,m}$, and thus the voltage of the picture element is temporally affected.

As such, the specification clearly discloses a gate line, a bipolar pulse supplied to the gate line, and the timing of the bipolar pulse (see, e.g., Figure 1(D), reproduced above). Therefore, the Applicant was clearly in possession of a circuit to make these pulses at the time the invention was made. The Applicant respectfully submits that one of ordinary skill in the art, upon consulting the present specification, would readily understand that the bipolar pulse described in the present application is generated by a driving circuit, and that the driving circuit would be provided to generate the bipolar pulse that is supplied to the gate line. This is particularly true given the fact that the present specification explicitly discloses "driving a picture element," "driving an electro-optical device," that "FIG. 3(A) shows a driving operation for the circuit as shown in FIGS. 1(A) and 1(C), and FIG. 3(B) shows a driving operation for the circuit as shown in FIGS. 1(B) and 1(D)," "driving the picture element (TFT)," and "driving methods for the active matrix circuits of the prior art and this invention."

Therefore, the Applicant respectfully submits that claims 159-165, when read in light of the specification, are adequately described and supported in the specification. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112 are in order and respectfully requested.

The Official Action objects to the drawings under 37 CFR § 1.83(a) asserting that "the recited feature 'a driving circuit ... for generating bipolar pulse(s)' of claims 159-165 must be shown or the feature(s) canceled from the claim(s)" (page 2, id.). However, as noted above, Figure 1(D) provides an example of gate lines and first and second bipolar pulses. Although a driving circuit is not explicitly shown, as noted above, one of ordinary skill in the art upon reviewing the present specification would understand that a driving circuit is provided to generate the bipolar pulses and is connected to the gate lines. As noted in 35 U.S.C. § 113, "The applicant shall furnish a drawing where

necessary for the understanding of the subject matter to be patented." In the present application, the Applicant respectfully submits that it is not believed to be strictly necessary to provide a drawing illustrating a driving circuit in order for one of ordinary skill in the art to understand the subject matter to be patented, particularly in light of the clear illustration of gate lines and first and second bipolar pulses. Accordingly, reconsideration and withdrawal of the objections are in order and respectfully requested.

The Official Action objects to the specification "as failing to provide proper antecedent basis for the claimed subject matter" (page 2, Paper No. 20071028). Specifically, the Official Action asserts that "the specification does not disclose the feature 'a driving circuit connected to said gate line ... for generating bipolar pulse(s)' (pages 2-3, Id.). For the reasons noted above, the Applicant respectfully submits that the specification provides proper antecedent basis for a driving circuit for generating bipolar pulses.

The Official Action rejects claims 121-123, 125, 126, 128, 142, 143-145, 147-150, 152 and 159-165 as anticipated by U.S. Patent No. 4,775,861 to Saito. The Applicant respectfully traverses the rejection because the Official Action has not established an anticipation rejection.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Applicant respectfully submits that an anticipation rejection cannot be maintained against independent claims 121, 125, 142 and 148 of the present application. Claims 121, 125, 142 and 148 positively recite "a first bipolar pulse" and "a second bipolar pulse" or "a bipolar pulse." These features are not mere statements of the intended use of the electro-optical device. Rather, the Applicant has claimed an electro-optical device in operation, where the device in operation includes a bipolar

pulse or first and second bipolar pulses applied to a gate line. Specifically, claims 121 and 142 recite that a first bipolar pulse is applied to a gate line of n -th row during a first period, a second bipolar pulse is applied to a gate line of $(n+1)$ -th row during a second period, and the second period appears later than and partly overlaps the first period, and that each of the first and second bipolar pulses includes a first pulse and a second pulse having an opposite polarity to the first pulse. Claims 125 and 148 recite that a bipolar pulse is applied to a gate line of n -th row, and that the bipolar pulse includes a first pulse and a second pulse having an opposite polarity to the first pulse. For the reasons provided below, the Applicant respectfully submits that Saito does not teach the above-referenced features of the present invention, either explicitly or inherently.

The Official Action appears to concede that Saito does not teach or suggest the above-referenced features of the independent claims. The Official Action has not presented a *prima facie* case of anticipation demonstrating that a single prior art reference teaches all the features of the present invention, either explicitly or inherently. Rather, the Official Action has attempted to ignore the above-referenced features by asserting that the features are mere intended use and by citing the Board's decision in Ex parte Masham. Specifically, the Official Action asserts the following at page 4, lines 3-11 (emphasis added):

The recited feature "wherein a first bipolar pulse is applied to the gate line ... to the first pulse" has not been given patentable weight because it is directed to the manner of operating the device. It has been recognized that the manner of operating the device does not differentiate apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). See MPEP 2114, page 2100-56.

The Applicant respectfully disagrees and traverses the assertions in the Official Action.

The independent claims of the present application clearly and positively recite an electro-optical device comprising, for example, a first bipolar pulse applied to a gate line of n-th row and a second bipolar pulse applied to a gate line of (n+1)-th row, or a bipolar pulse applied to a gate line. The bipolar pulses are components of the claimed electro-optical device in operation and not mere statements of intended use. The Applicant has claimed a device in operation including the bipolar pulses. There is no prohibition against an Applicant claiming a device in operation. Also, in a claim directed to a device in operation, positively recited features are not statements of mere intended use of the device. A claim directed to a device in operation may be differentiated from a device claim where the intended use of the device is set forth in the preamble in a phrase beginning with "for" or where a given structural feature "is adapted" for an intended function or "is capable" of having an intended function. Such types of "intended use" language are not used in the present claims. For example, the Applicant is not merely claiming a gate line that may be adapted to receive a bipolar pulse. Rather, the Applicant is clearly and positively reciting that the present electro-optical device includes a bipolar pulse and a gate line, and the bipolar pulse is applied to the gate line.

When one of ordinary skill in the art at the time of the present invention operates the device of Saito, one would not have known to generate bipolar pulses and apply those pulses to the gate lines. There is no intention in Saito to apply a bipolar pulse to a gate line. If there was an intent to apply a bipolar pulse to the gate line in Saito, there would have been a disclosure of such fact. Absent this disclosure, anticipation has not been proven.

Also, the present claims are clearly differentiated from the claims in question in Ex parte Masham. MPEP § 2114 states the following (emphasis added):

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (The preamble of claim 1 recited that the apparatus was "for mixing flowing developer material" and

the body of the claim recited "means for mixing ..., said mixing means being stationary and completely submerged in the developer material". The claim was rejected over a reference which taught all the structural limitations of the claim for the intended use of mixing flowing developer. However, the mixer was only partially submerged in the developer material. The Board held that the amount of submersion is immaterial to the structure of the mixer and thus the claim was properly rejected.).

In Ex parte Masham, the Board maintained the positively recited features of the claims, i.e. a mixer and flowing developer material. However, the Board did not give patentable weight to the statement "for mixing flowing developer material" or that the mixer is "completely submerged in the developer material." In Ex parte Masham, the device of the prior art could be operated completely submerged and it was just as likely to be operated submerged as not. Also, the prior art differed from the claim in question as a matter of degree. Specifically, the prior art in Ex parte Masham, disclosed partial submersion of a mixer. However, in the present application, Saito cannot be operated to create a bipolar pulse and it would not have been just as likely for one of ordinary skill in the art at the time of the present invention to operate Saito in a manner such that a bipolar pulse is generated and applied to the gate lines, much less that such pulses could or should be applied in the manner as presently claimed. Also, Saito does not differ from the present claims by a mere matter of degree. Rather, Saito fails to teach a bipolar pulse, either explicitly or inherently.

Therefore, the Official Action has not demonstrated that Saito teaches all the limitations of the present claims. Saito is completely silent as to the use of a bipolar pulse. Specifically, Saito does not teach (1) that a first bipolar pulse is applied to a gate line of n -th row during a first period, a second bipolar pulse is applied to a gate line of $(n+1)$ -th row during a second period, and the second period appears later than and partly overlaps the first period, and that each of the first and second bipolar pulses includes a first pulse and a second pulse having an opposite polarity to the first pulse; or (2) that a bipolar pulse is applied to a gate line of n -th row, and that the bipolar pulse

includes a first pulse and a second pulse having an opposite polarity to the first pulse, either explicitly or inherently.

Since Saito does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

At this opportunity, the Applicant has corrected minor typographical and grammatical informalities in claims 3, 133, 139, 141, 153 and 160. The amendments provide consistency between claim elements. The amendments do not add new matter, do not raise any new issues, and do not necessitate further consideration or search. As such, the Applicant respectfully requests entry of the present *Amendment* after final.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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